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US ARMY DEFENSE AMMUNITION CENTER
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SUBJECT: Report No. 06-04B, "Transportability Testing of the Joint Modular Intermodal Platform (JMIP) #2", TP-94-01, "Transportability Testing Procedures"

1. Enclosed please find subject report dated November 2006.

2. The POC is the undersigned, SJMAC-DEV, DSN 956-8908.

FOR THE DIRECTOR:

Encl
as

JERRY W. BEAVER
Chief, Validation Engineering Division

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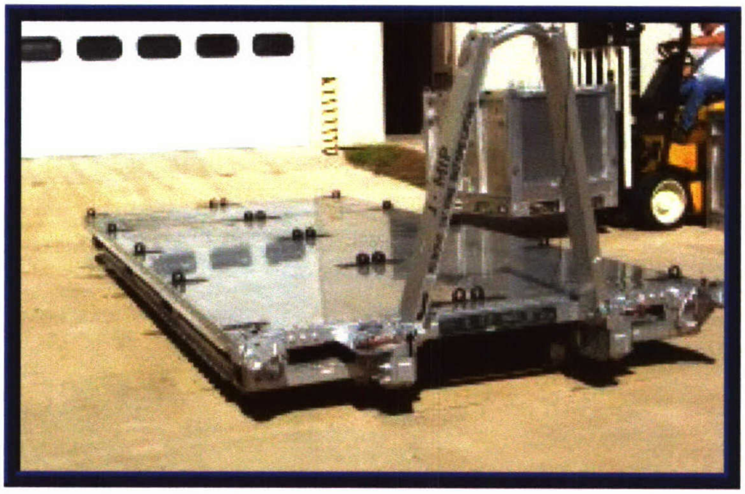
FINAL REPORT
NOVEMBER 2006

REPORT NO. 06-04B



TRANSPORTABILITY TESTING OF THE JOINT MODULAR INTERMODAL PLATFORM (JMIP) #2, TP-94-01, "TRANSPORTABILITY TESTING PROCEDURES"

Prepared for:

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Logistics Research and Development Activity
ATTN: AMSRD-AAR-AIL-F
Picatinny Arsenal, NJ 07806

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REPORT NO. 06-04B **NOVEMBER 2006**

TRANSPORTABILITY TESTING OF THE JOINT MODULAR INTERMODAL PLATFORM (JMIP) #2, TP-94-01, REV. 2, JUNE 2004, "TRANSPORTABILITY TESTING PROCEDURES"

ABSTRACT

The U.S. Army Defense Ammunition Center (DAC), Validation Engineering Division (SJMAC-DEV), was tasked by the Logistics Research and Development Activity (AMSRD-AAR-AIL-F), Picatinny Arsenal, NJ to conduct transportability testing on the Joint Modular Intermodal Platform (JMIP) #2 manufactured by SEA BOX Inc, East Riverton, NJ. JMIP #2 was equipped with integral rings to secure the Navy Joint Modular Intermodal Containers (JMIC). The testing was conducted in accordance with TP-94-01, Revision 2, June 2004 "Transportability Testing Procedures."

The objective of the testing was to evaluate the Joint Modular Intermodal Platform (JMIP) #2 when transportability tested in accordance with TP-94-01, Revision 2, June 2004 for use during the Limited Military Utility Assessment (LMUA).

The following observations resulted from the testing of JMIP:

1. Prior to the beginning of testing hydraulic fluid was leaking from the rear of JMIP #2. Inspection following the completion of testing revealed that many of the fittings on the hydraulic lines were only finger tight.
2. The interface rings that secured the JMICs to JMIP #2 did not have a positive lock to hold them in the upright position. Prior to testing one ring would not stay in the upright position. During the loading of the JMIC at that position on the JMIP with the faulty ring, the ring was held in the upright position using a

string. Extreme care must be taken to ensure that the rings stay in the upright position when the JMICs are loaded onto JMIP #2.

3. The JMICs will have to be loaded in a sequence so that the rings will remain visible to personnel to ensure proper engagement. For instance we started at the rear of JMIP #2 and loaded one side completely going from the rear to the bail bar end. The remaining four JMICs were loaded onto the other side from the bail bar end to the rear of JMIP #2.

4. The rails at the front of JMIP #2 did not rest on the PLS truck supports (frog feet).

5. The rail transport pin holes on JMIP #2 did not line up with the hole on the PLS truck. The rails on JMIP #2 were positioned differently than JMIP #1, in that they started further back in the container. All dimensions of JMIP #2 must conform to the NATO Interoperability Agreement, STANAG 2413.

6. The rail locking pins backed off during the first pass of the hazard course. Set screws were added to the locking pins and the hazard course testing was repeated. The set screws prevented the rail locking pins from backing out during retesting.

7. Care must be taken to ensure that the A-frame locking pins are properly engaged when JMIP #2 is picked up using a load handling system.

8. During the washboard course testing the cotter pin that is used to prevent the handle that actuates the PLS pins from opening during transport was lost. This did not effect the testing.

9. Some movement of the adjustment bolt on the cams did occur during the testing. The movement of the cam locking bolt was not significant enough to cause excessive movement of JMIP #2. Future designs of the cam locking devices should prevent the bolts from moving in or out.

10. The top bracket of the roller wheel assemblies was bent when JMIP #2 was dropped from the intermodal container during the extraction process. The roller wheel assemblies still functioned properly.

11. Final inspection revealed a cracked weld where the A-frame rail assembly connects to the right front pocket.

The following conclusions resulted from the testing of JMIP:

1. JMIP #2, as currently designed, is adequate, to be used to transport the JMIC containers with ammunition, on/off road, using a Load Handling System equipped vehicle during the Limited Military Utility Assessment (LMUA). (Example – PLS truck).

2. JMIP #2, as currently designed, is adequate, to be used to transport the JMIC containers with ammunition, on/off road, in an intermodal container during the LMUA.

3. The maximum gross weight (platform and payload weight) is **not to exceed** 15,000 pounds during the LMUA.

Prepared by:	Reviewed by:
PHILIP W. BARICKMAN Lead Validation Engineer	JERRY W. BEAVER Chief, Validation Engineering Division

U.S. ARMY DEFENSE AMMUNITION CENTER

VALIDATION ENGINEERING DIVISION
MCALESTER, OK 74501-9053

REPORT NO. 06-04B

Transportability Testing of the
Joint Modular Intermodal Platform (JMIP) #2
TP-94-01, Revision 2, June 2004 "Transportability Testing Procedures"

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PART PAGE NO.

PART 1 – INTRODUCTION

A. BACKGROUND. The U.S. Army Defense Ammunition Center (DAC), Validation Engineering Division (SJMAC-DEV), was tasked by the Logistics Research and Development Activity (AMSRD-AAR-AIL-F), Picatinny Arsenal, NJ to conduct transportability testing on the Joint Modular Intermodal Platform (JMIP) #2 manufactured by SEA BOX Inc, East Riverton, NJ. JMIP #2 was equipped with integral rings to secure the Navy Joint Modular Intermodal Containers (JMIC). The testing was conducted in accordance with TP-94-01, Revision 2, June 2004 "Transportability Testing Procedures."

B. AUTHORITY. This test was conducted IAW mission responsibilities delegated by the U.S. Army Joint Munitions Command (JMC), Rock Island, IL. Reference is made to the following:

1. AR 740-1, 15 June 2001, Storage and Supply Activity Operation.

2. OSC-R, 10-23, Mission and Major Functions of U.S. Army Defense Ammunition Center (DAC) 21 Nov 2000.

C. OBJECTIVE. The objective of the testing was to evaluate the Joint Modular Intermodal Platform (JMIP) #2 when transportability tested in accordance with TP-94-01, Revision 2, June 2004 for use during the Limited Military Utility Assessment (LMUA).

D. OBSERVATIONS.

1. Prior to the beginning of testing hydraulic fluid was leaking from the rear of the JMIP #2. Inspection following the completion of testing revealed that many of the fittings on the hydraulic lines were only finger tight.

2. The rings that were used to secure the JMICs to JMIP #2 did not have a positive lock to hold them in the upright position. Prior to testing one ring would not stay in the upright position. During the loading of the JMIC at that position on the

JMIP with the faulty ring, the ring was held in the upright position using a string. Extreme care must be taken to ensure that the rings stay in the upright position when the JMICs are loaded onto JMIP #2.

3. The JMICs will have to be loaded in a sequence so that the rings will remain visible to personnel to ensure proper engagement. For instance we started at the rear of JMIP #2 and loaded one side completely going from the rear to the bail bar end. The remaining four JMICs were loaded onto the other side from the bail bar end to the rear of JMIP #2.

4. The rails at the front of JMIP #2 did not rest on the PLS truck supports (frog feet).

5. The rail transport pin holes on JMIP #2 did not line up with the hole on the PLS truck. The rails on JMIP #2 were positioned differently than JMIP #1, in that they started further back in the container. All dimensions of JMIP #2 must conform to the NATO Interoperability Agreement, STANAG 2413.

6. The rail locking pins backed off during the first pass of the hazard course. Set screws were added to the locking pins and the hazard course testing was repeated. The set screws prevented the rail locking pins from backing out during retesting.

7. Care must be taken to ensure that the A-frame locking pins are properly engaged when JMIP #2 is picked up using a load handling system.

8. During the washboard course testing the cotter pin that is used to prevent the handle that actuates the PLS pins from opening during transport was lost. This did not effect the testing.

9. Some movement of the adjustment bolt on the cams did occur during the testing. The movement of the cam locking bolt was not significant enough to cause excessive movement of JMIP #2. Future designs of the cam locking devices should prevent the bolts from moving in or out.

10. The top bracket of the roller wheel assemblies was bent when JMIP #2 was dropped from the intermodal container during the extraction process. The roller wheel assemblies still functioned properly.

11. Final inspection revealed a cracked weld where the A-frame rail assembly connects to the right front pocket.

E. CONCLUSIONS.

1. JMIP #2, as currently designed, is adequate, to be used to transport the JMIC containers with ammunition, on/off road, using a Load Handling System equipped vehicle during the Limited Military Utility Assessment (LMUA).
(Example – PLS truck).

2. JMIP #2, as currently designed, is adequate, to be used to transport the JMIC containers with ammunition, on/off road, in an intermodal container during the LMUA.

3. The maximum gross weight (platform and payload weight) is **not to exceed 15,000 pounds** during the LMUA.

PART 2 - ATTENDEES

ATTENDEE	MAILING ADDRESS
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Richard Garside DSN 956-8050 (918) 420-8050	Director U.S. Army Defense Ammunition Center ATTN: SJMAC-DET 1 C Tree Road, Bldg. 35 McAlester, OK 74501-9053
Bob Cook (570) 228-7934	52 Madison Street Newton, NJ 07860

PART 3 - TEST EQUIPMENT

1. Joint Modular Intermodal Container #2

   Manufactured by SEA BOX, East Riverton, NJ

   Model Number: J-MIP 002

   Serial Number: 00003

   Date of Manufacture: 11 September 2006

   Tare Weight: 4095 pounds

2. Joint Modular Intermodal Container (Navy)

   Weight: 325 pounds

   Length: 51-3/4 inches

   Width: 43-3/4 inches

   Height: 43 inches

3. Palletized Load System Truck

   Model #: M1074

   Manufactured by Oshkosh Truck Corporation, Oshkosh, WI

   ID #: 10T2P1NH6N1044011

   NSN: 2320-01-304-2277

   Serial #: 44011

   Curb Weight: 55,000 pounds

4. Truck, Tractor, MTV, M1088 A1

   ID #: J0229

   NSN: 2320 01 447 3893

   VSN: NL1FSC

   MFG Serial #: T-018488EFJM

   Weight: 19,340 pounds

5. Semitrailer, flatbed, breakbulk/container transporter, 34 ton

   Model #: M872A1

   Manufactured by Heller Truck Body Corporation, Hillsdale, NJ

   ID #: 11-1505 NX05NZ

   NSN: 2330 01 109 8006

   Weight: 19,240 pounds

6. Intermodal Container

   ID # CMCU 200006-8

   Date of Manufacture: 06/99

   Manufactured by Charleston Marine Containers, Charleston, SC

   Tare Weight: 4,870 pounds

   Maximum Gross Weight: 67,200 pounds

PART 4 - TEST PROCEDURES

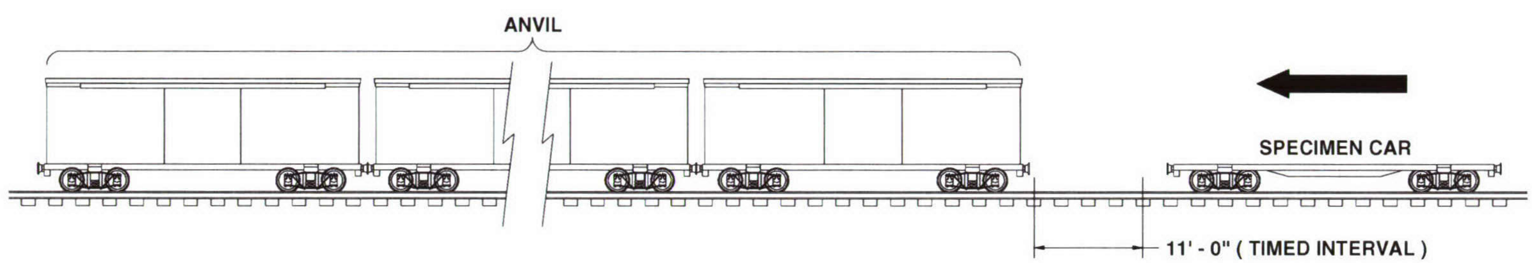
The test procedures outlined in this section were extracted from TP-94-01, "Transportability Testing Procedures," Revision 2, June 2004, for validating tactical vehicles and outloading procedures used for shipping munitions by tactical truck, railcar, and ocean-going vessel.

The rail impact will be conducted with the loaded intermodal container secured directly to the railcar. Inert (non-explosive) items were used to build the load. The test loads were prepared using the blocking and bracing procedures proposed for use with munitions (***see Part 6 for procedures***). The weight and physical characteristics (weights, physical dimensions, center of gravity, etc.) of the test loads were similar to live (explosive) ammunition.

A. RAIL TEST. RAIL IMPACT TEST METHOD. The test load or vehicle will be secured to a flatcar. The equipment needed to perform the test will include the specimen (hammer) car, four empty railroad cars connected together to serve as the anvil, and a railroad locomotive. The anvil cars will be positioned on a level section of track with air and hand brakes set and with draft gears compressed. The locomotive unit will push the specimen car toward the anvil at a predetermined speed, then disconnect from the specimen car approximately 50 yards away from the anvil cars allowing the specimen car to roll freely along the track until it strikes the anvil. This will constitute an impact. Impacting will be accomplished at speeds of 4, 6, and 8.1 mph in one direction and at a speed of 8.1 mph in the reverse direction. The tolerance for the speeds is plus 0.5 mph, minus 0.5 mph for the 4 mph and 6 mph impacts, and plus 0.5 mph, minus 0 mph for the 8.1 mph impacts. The impact speeds will be determined by using an electronic counter to measure the time for the specimen car to traverse an 11-foot distance immediately prior to contact with the anvil cars (see Figure 1).

ASSOCIATION OF AMERICAN RAILROADS (AAR)

STANDARD TEST PLAN



4 BUFFER CARS (ANVIL) WITH DRAFT GEAR COMPRESSED AND AIR BRAKES IN A SET POSITION

ANVIL CAR TOTAL WT. 250,000 LBS (APPROX)

SPECIMEN CAR IS RELEASED BY SWITCH ENGINE TO

ATTAIN: IMPACT NO. 1 @ 4 MPH
IMPACT NO. 2 @ 6 MPH
IMPACT NO. 3 @ 8.1 MPH

THEN THE CAR IS REVERSED AND RELEASED BY SWITCH ENGINE TO ATTAIN:

IMPACT NO. 4 @ 8.1 MPH

Figure 1. Rail Impact Sketch

B. ON/OFF ROAD TEST.

1. **HAZARD COURSE**. The test load or vehicle will be transported over the 200-foot-long segment of concrete-paved road consisting of two series of railroad ties projecting 6 inches above the level of the road surface. The hazard course will be traversed two times (see Figure 2).

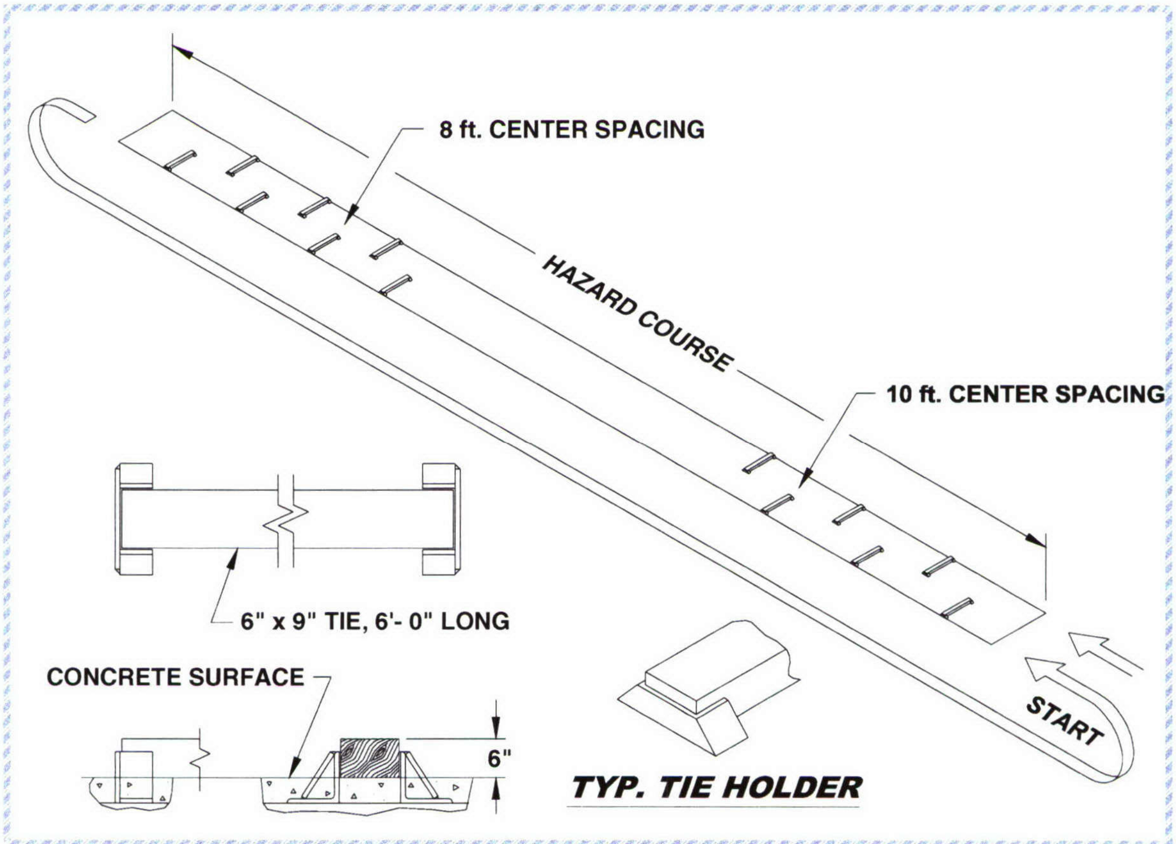


Figure 2. Hazard Course Sketch

a. The first series of 6 ties are spaced on 10-foot centers and alternately positioned on opposite sides of the road centerline for a distance of 50 feet.

b. Following the first series of ties, a paved roadway of 75 feet separates the first and second series of railroad ties.

c. The second series of 7 ties are spaced on 8-foot centers and alternately positioned on opposite sides of the road centerline for a distance of 48 feet.

d. The test load is driven across the hazard course at speeds that will produce the most violent vertical and side-to-side rolling reaction obtainable in traversing the hazard course (approximately 5 mph).

2. ROAD TRIP. The test load or vehicle will be transported for a distance of 30 miles over a combination of roads surfaced with gravel, concrete, and asphalt. The test route will include curves, corners, railroad crossings and stops and starts. The test load or vehicle will travel at the maximum speed for the particular road being traversed, except as limited by legal restrictions.

3. PANIC STOPS. During the road trip, the test load or vehicle will be subjected to three (3) full airbrake stops while traveling in the forward direction and one in the reverse direction while traveling down a 7 percent grade. The first three stops are at 5, 10, and 15 mph while the stop in the reverse direction is approximately 5 mph. This testing will not be required if the Rail Impact Test is performed.

4. WASHBOARD COURSE. The test load or vehicle will be driven over the washboard course at a speed that produces the most violent response in the vertical direction.

C. OCEAN-GOING VESSEL TEST. Shipboard Transportation Simulator (Test Method 5). The Shipboard Transportation Simulator (STS) is used for testing loads in 8-foot-wide by 20-foot-long intermodal freight containers. The specimen shall be positioned onto the STS and securely locked in place using the cam lock at each corner. Using the procedure detailed in the operating instructions, the STS shall begin oscillating at an angle of 30 degrees, plus or minus 2 degrees, either side of vertical center and a frequency of 2 cycles-per-

minute (30 seconds, plus or minus 2 seconds) for a duration of two (2) hours. This frequency shall be observed for apparent defects that could cause a safety hazard. The frequency of oscillation shall then be increased to 4 cycles-per-minute (15 seconds, plus or minus one second per cycle) and the apparatus operated for two (2) hours. If an inspection of the load does not indicate an impending failure, the frequency of oscillation shall be further increased to 5 cycles-per-minute (12 seconds, plus or minus one second per cycle), and the apparatus operated for four (4) hours. The operation does not necessarily have to be continuous; however, no changes or adjustments to the load or load restraints shall be permitted at any time during the test. After once being set in place, the test load (specimen) shall not be removed from the apparatus until the test has been completed or is terminated.

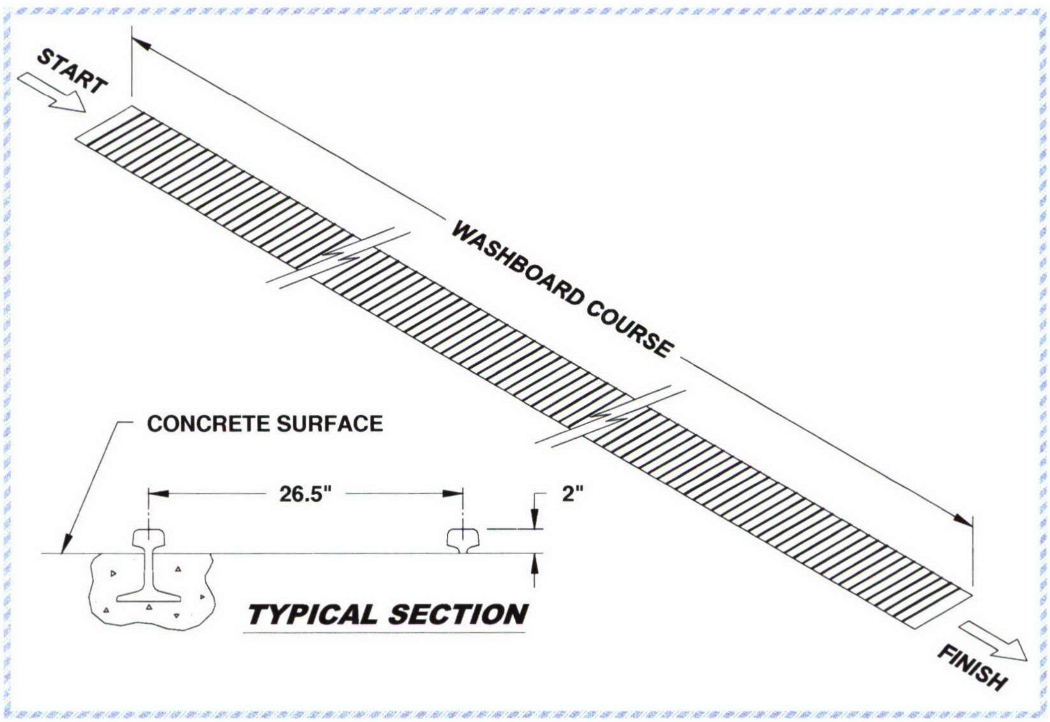


Figure 3. Washboard Course Sketch

PART 5 - TEST RESULTS

5.1

Test Specimen: SEA BOX JMIP #2 on the PLS Truck

Payload: 8 Navy JMICs.

Testing Date: 26 September 2006

Gross Weight: 15,220 pounds (Including JMIP #2 and JMICs).

Notes:

1. Prior to the beginning of testing hydraulic fluid was leaking from the rear of JMIP #2. Inspection following the completion of testing revealed that many of the fittings on the hydraulic lines were only finger tight.

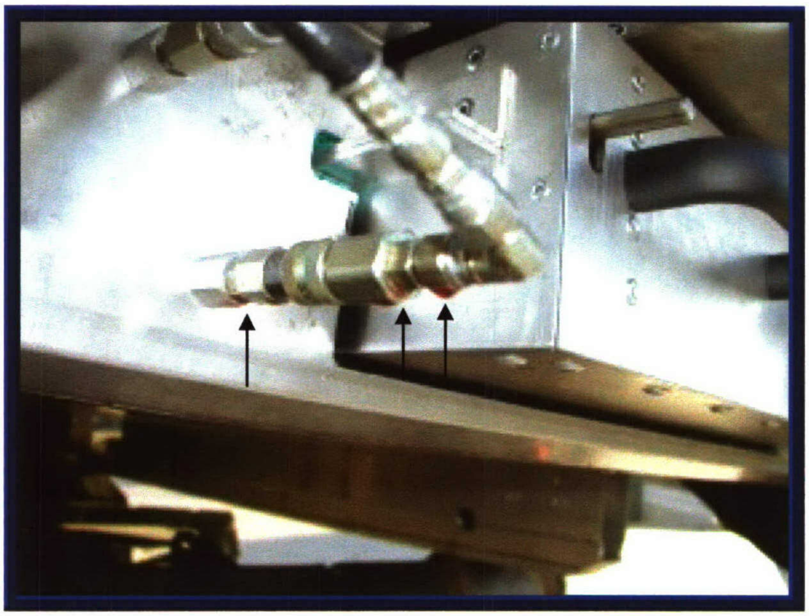


Photo 1. Hydraulic Leaks

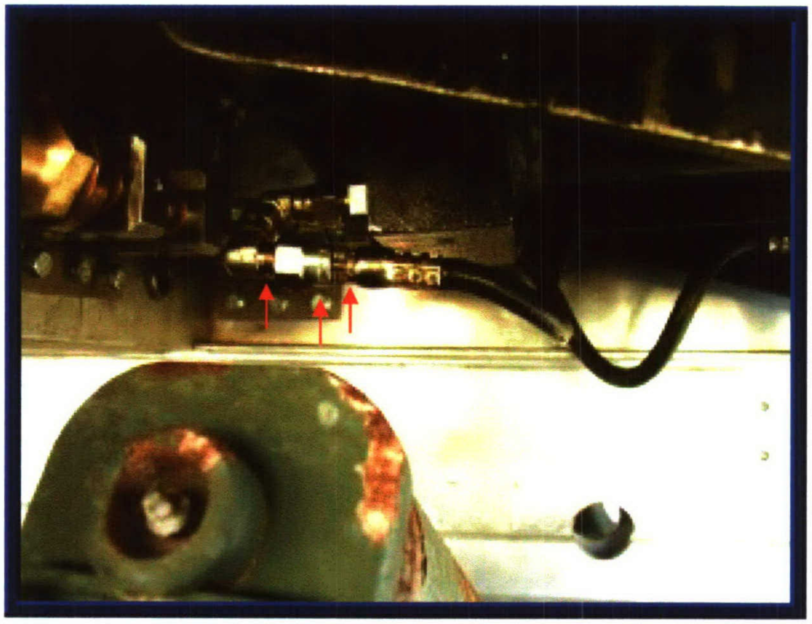


Photo 2. Hydraulic Leaks.

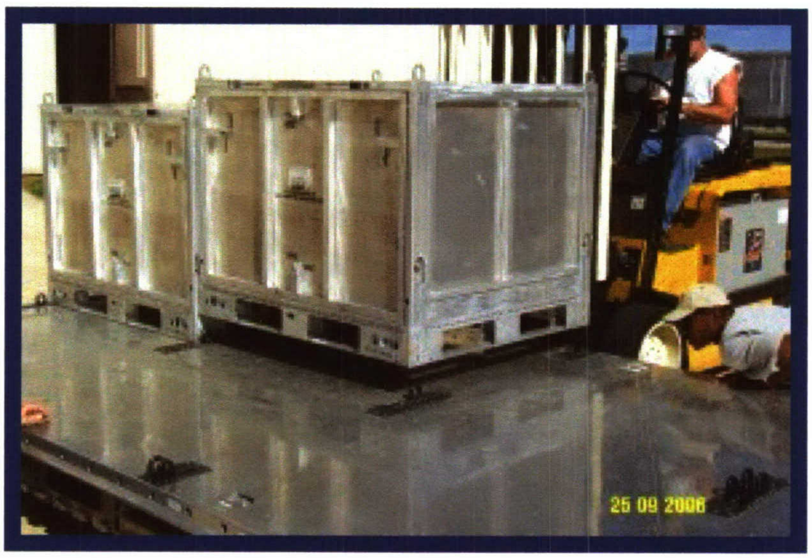


Photo 3. Loading JMICs on JMIP #2.

2. The interface rings that secured the JMICs to JMIP #2 did not have a positive lock to hold them in the upright position. Prior to testing one ring would not stay in the upright position. When loading the JMIC at that position the ring had to be held in the upright position using a string. Extreme care must be taken to ensure that the rings stay in the upright position when the JMICs are loaded onto the JMIP #2.

3. The JMICs will have to be loaded in a sequence so that the rings will remain visible to personnel to ensure proper engagement. For instance, we started at the rear of JMIP #2 and loaded one side completely going from the rear to the bail bar end. The remaining four JMICs were loaded onto the other side from the bail bar end to the rear of JMIP #2.

4. The rails at the front of JMIP #2 did not rest on the PLS truck supports (frog feet).

5. The rail transport pin holes on JMIP #2 did not line up with the hole on the PLS truck.

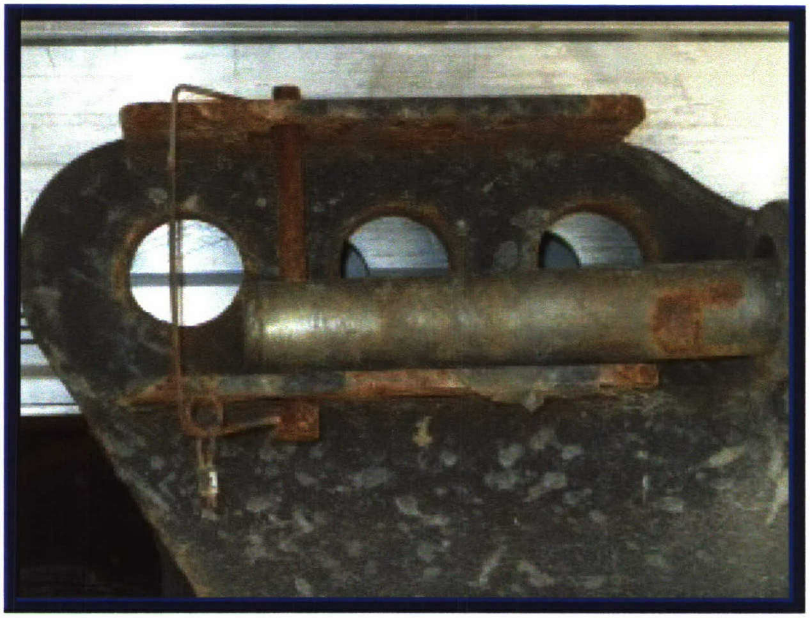


Photo 4. Misalignment of Rail Pin Holes

6. Care must be taken to ensure that the A-frame locking pins are properly engaged when JMIP #2 is picked up using a load handling system.

A. ON/OFF ROAD TESTS.

1. HAZARD COURSE.

Photo 5. Loaded JMIP #2 on the PLS Truck

Pass No.	Elapsed Time	Avg. Velocity (mph)
1	20 Seconds	7

Figure 4.

Remarks:

1. Figure 4 lists the average speed of the test load through the Hazard Course.
2. The rail locking pins backed off 0.125-0.75 inches during the first pass of the Hazard Course. Set screws were added to the locking pins and the Hazard Course Testing was repeated.

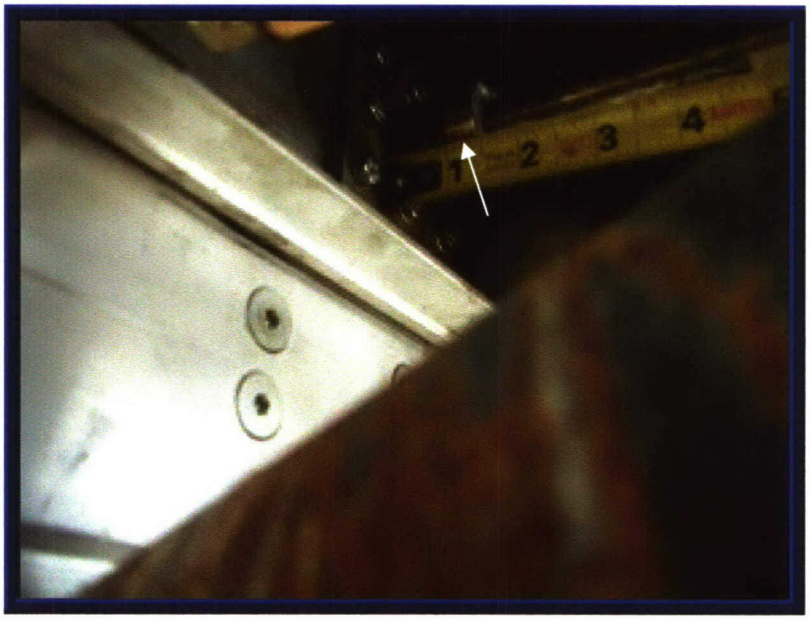


Photo 6. Backed Off Rail Locking Pin.

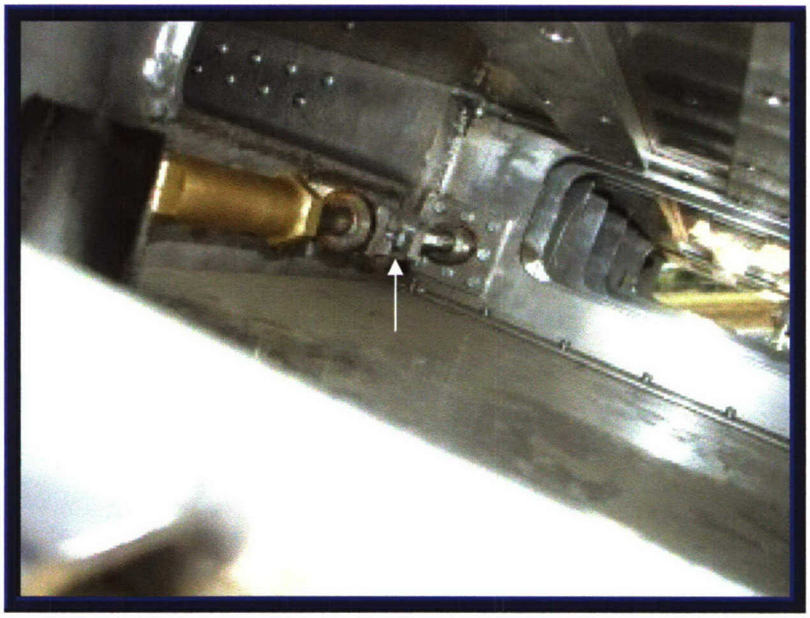


Photo 7. Locking Pin with Added Set Screw.

Pass No.	Elapsed Time	Avg. Velocity (mph)
1	23 Seconds	6
2	19 Seconds	7

Figure 5.

Remarks:

1. Figure 5 lists the average speeds of the test load through the Hazard Course.
2. Inspection following Passes #1 & #2 did not reveal any damage to JMIP #2.
3. Inspection following Pass #2 revealed that one rail locking pin had retracted 0.0625 inches. The rail locking pin was still safely engaged.

2. ROAD TRIP:

Remarks:

1. The Road Trip was conducted between the Road Hazard Course Passes #2 and #3.
2. Inspection following the Road Trip revealed no damage to JMIP #2.

3. PANIC STOPS: Inspection following completion of each of the Panic Stops did not reveal any damage or movement of JMIP #2.

4. HAZARD COURSE:

Pass No.	Elapsed Time	Avg. Velocity (mph)
3	22 Seconds	6
4	23 Seconds	6

Figure 6.

Remarks:

1. Figure 6 lists the average speeds of the test load through the Hazard Course.
2. Inspection following Passes 3 & 4 did not reveal any damage to JMIP #2.

5. **WASHBOARD COURSE:**

Remark: Inspection following the Washboard Course did not reveal any damage to JMIP #2.

B. OBSERVATIONS:

1. Clarification needs to be provided on JMIP #2 to easily identify that the A-frame is in the proper lifting position. This will prevent damaging the pins/blocks from improper lifting using a load handling system when the A-frame is in the container transport position.
2. The interface rings that secured the JMICs to JMIP #2 did not have a positive lock to hold them in the upright position. Prior to testing one ring would not stay in the upright position. During the loading of the JMIC at that position on JMIP #2 with the faulty ring, the ring was held in the upright position using a string. Extreme care must be taken to ensure that the rings stay in the upright position when the JMICs are loaded onto JMIP #2.
3. The JMICs will have to be loaded in a sequence so that the rings will remain visible to personnel to ensure proper engagement. For instance we started at the rear of JMIP #2 and loaded one side completely going from the rear to the bail bar end. The remaining four JMICs were loaded onto the other side from the bail bar end to the rear of JMIP #2.
4. All dimensions of JMIP #2 must conform to the NATO Interoperability Agreement, STANAG 2413.

C. CONCLUSIONS:

1. JMIP #2, as currently designed, is adequate, to be used to transport the Navy JMIC containers with ammunition, on/off road, using a Load Handling System equipped vehicle during the Limited Military Utility Assessment (LMUA). (Example – PLS truck).
2. The maximum gross weight (platform and payload weight) **is not to exceed** 15,000 pounds during the LMUA.

5.2

Test Specimen: SEA BOX JMIP #2 in an Intermodal Container.

Payload: 8 Navy JMICs

Testing Date: 26 September 2006

Gross Weight: 20,090 pounds (Including JMIP #2, JMICs and intermodal container).

Note: The rails on JMIP #2 were positioned differently than JMIP #1, in that they started further back in the container.

Photo 8. JMIP #1 Rail Position.

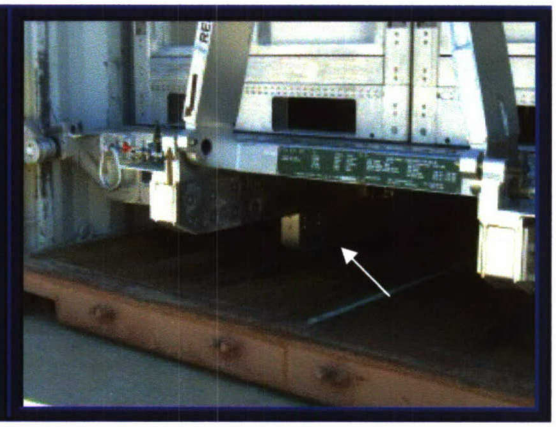


Photo 9. JMIP #2 Rail Position.

Photo 10. JMIP #2 in the Intermodal Container

A. ON/OFF ROAD TESTS.

1. HAZARD COURSE.

Photo 11. Hazard Course Testing of JMIP #2 in the Intermodal Container.

Pass No.	Elapsed Time	Avg. Velocity (mph)
1	24 Seconds	6
2	24 Seconds	6

Figure 7.

Remarks:

1. Figure 7 lists the average speed of the test load through the Hazard Course.
2. Inspection following the completion of Passes #1 & #2 did not revealed any damage to JMIP #2.
3. Inspection following Pass #1 revealed that the JMIP #2 moved toward the driver's side 0.25 inches.
4. The adjustment bolts on the cams moved during Passes 1 & 2. JMIP #2 remained secure in the container. The pin that prevents the cam from rotating

does not rest against the cam which may allow the cams and adjustment bolts to move.

2. ROAD TRIP:

Remarks:

1. The Road Trip was conducted between the Road Hazard Course Passes #2 and #3.
2. Inspection following the Road Trip revealed no damage to JMIP #2.

3. PANIC STOPS: Inspection following completion of each of the Panic Stops did not reveal any damage or movement of JMIP #2.

4. HAZARD COURSE:

Pass No.	Elapsed Time	Avg. Velocity (mph)
3	24 Seconds	6
4	25 Seconds	6

Figure 8.

Remarks:

1. Figure 8 lists the average speeds of the test load through the Hazard Course.
2. Inspection following Passes 3 & 4 did not reveal any damage to JMIP #2.

5. WASHBOARD COURSE:

Remarks:

1. Inspection following the Washboard Course did not reveal any damage to JMIP #2.

2. Inspection following the completion of the Washboard Course revealed that the cotter pin that is used to prevent the handle that actuates the PLS pins from opening during transport was lost. This did not effect the testing.

B. <u>OBSERVATIONS</u>:

1. Some movement of the adjustment bolt on the cams did occur during the testing. The movement of the cam locking bolt was not significant enough to cause excessive movement of JMIP #2. Future designs of the cam locking devices should prevent the bolts from moving in or out.

2. The top bracket of the roller wheel assemblies was bent when JMIP #2 was dropped from the intermodal container during removal with the PLS truck. The roller wheel assemblies still functioned properly.

Photo 12. Bent Top Bracket.

3. Final inspection revealed a cracked weld where the A-frame rail assembly connects to the right front forklift pocket.

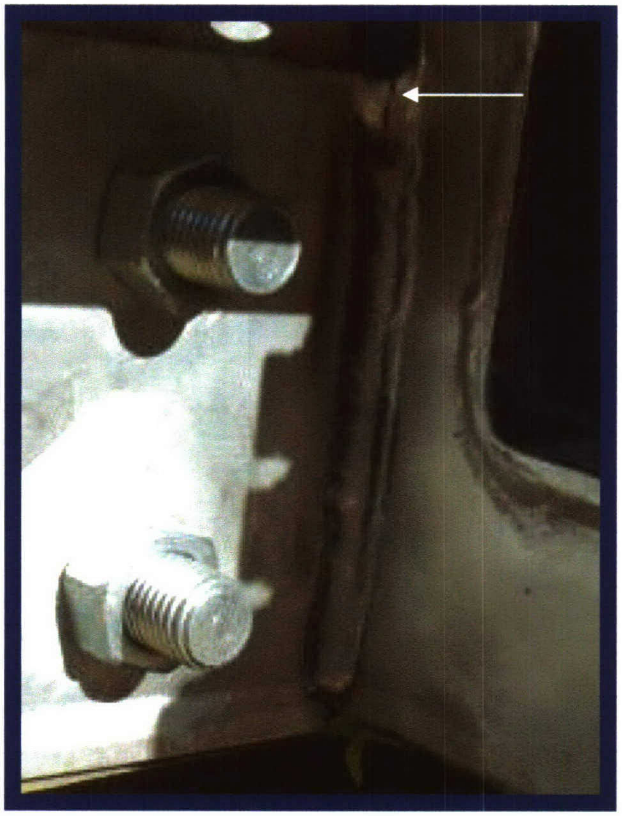


Photo 13. Cracked Weld.

C. CONCLUSIONS:

1. JMIP #2, as currently designed, is adequate, to be used to transport the JMIC containers with ammunition, on/off road, in an intermodal container during the LMUA.

2. The maximum gross weight (platform and payload weight) **is not to exceed** 15,000 pounds during the LMUA.

PART 6 – DRAWINGS

The following drawing represents the load configuration that was subjected to the test criteria.

TEST SKETCH

LOADING AND BRACING OF JOINT MODULAR INTERMODAL CONTAINERS (JMICS) ON THE JOINT MODULAR INTERMODAL PLATFORM (JMIP)

THIS FOUR PAGE DOCUMENT DEPICTS NAVY JMIC PROTOTYPES ON A SEABOX PROTOTYPE JMIP FOR INTEGRATION TRANSPORTABILITY TESTING AT AN APPROXIMATE 15,000 LBS GROSS LOAD

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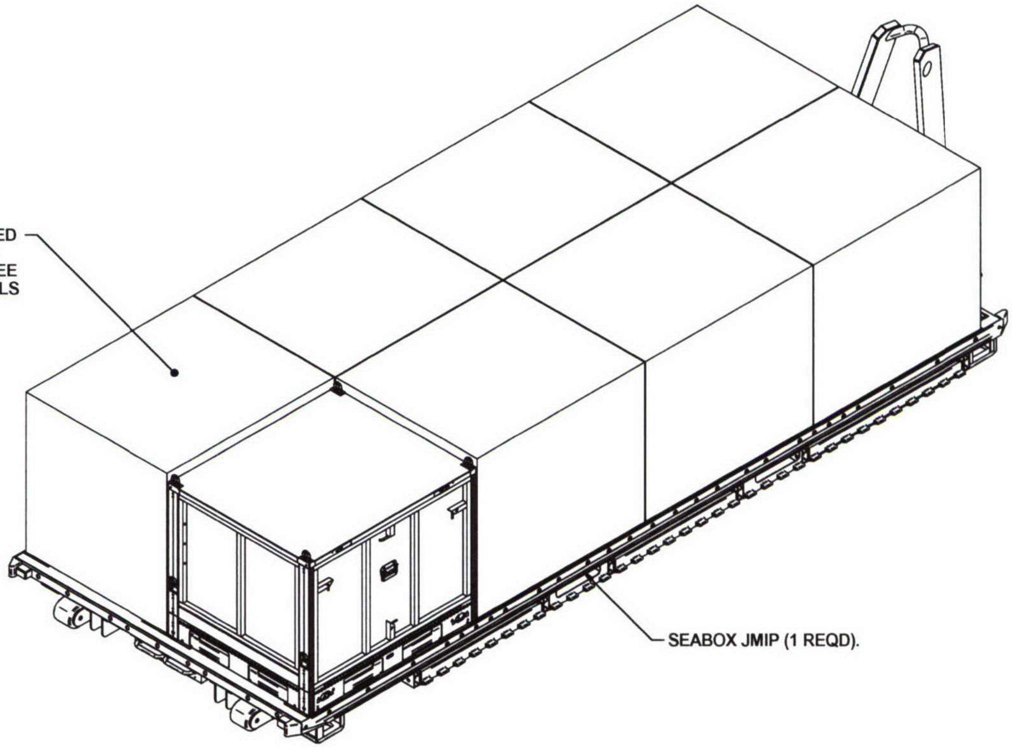
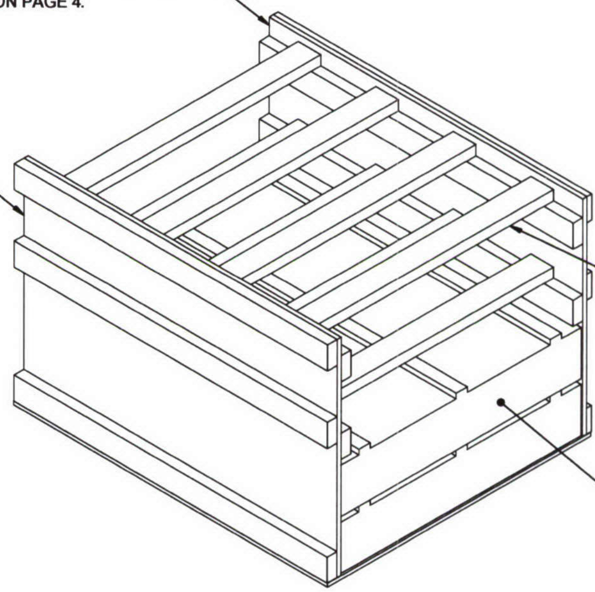


ISOMETRIC VIEW

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
NAVY PANEL JMIC	8	11,168 LBS
JMIP		3,800 LBS
TOTAL WEIGHT		14,968 LBS (APPROX)

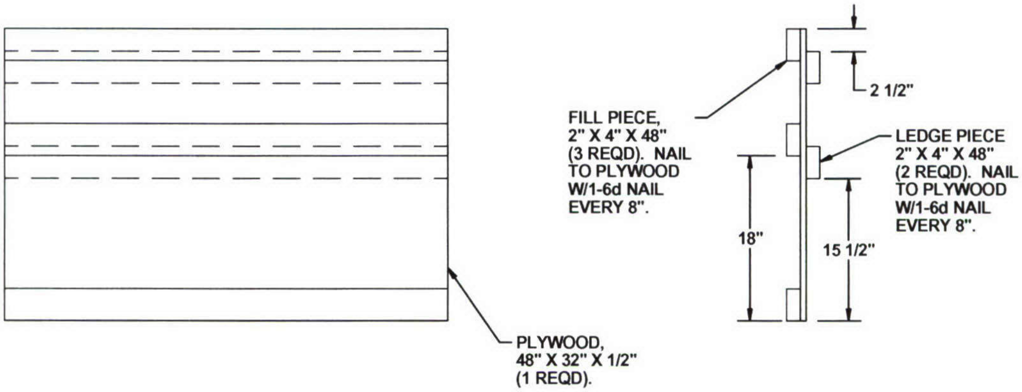
8 JMIC UNIT LOAD ON JOINT MODULAR INTERMODAL PLATFORM (JMIP)



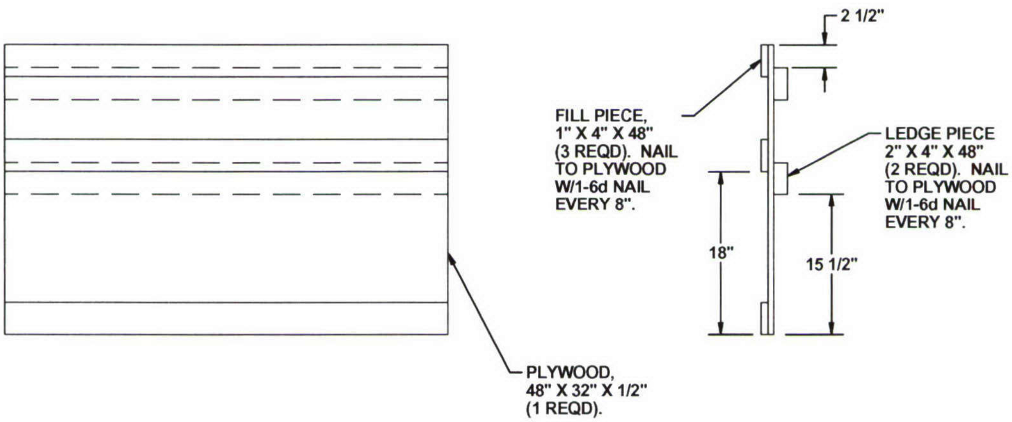
NAVY JMIC UNIT - LIGHT LOAD
(8 REQD)

8 C445 BOXES @ 120 LBS	960 LBS
DUNNAGE	111 LBS
NAVY JMIC	325 LBS
TOTAL WEIGHT	1,396 LBS (APPROX)
CUBE	56.7 CU FT (APPROX)

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	12	4
2" X 4"	53	36
NAILS	NO. REQD	POUNDS
6d (2")	60	.35
10d (3")	32	.48
NAVY JMIC	1 REQD	325 LBS
1/2 PLYWOOD	22 SQ FT	30 LBS



END FILL ASSEMBLY A
(1 REQD)



END FILL ASSEMBLY B
(1 REQD)